Appendix L

Part 1
Weather Data

Part 2
Fire Flow Test

Part 3
Environmental Compliance Report

Part 4
Borrow Pit Procedures

HUNTER AAF GA	
Latitude = 32.02 N	WMO No. 747804
Longitude = 81.15 W	Elevation = 43 Feet
Period of Record = 1967 TO 1996	Average Pressure = 29.98 inches Hg

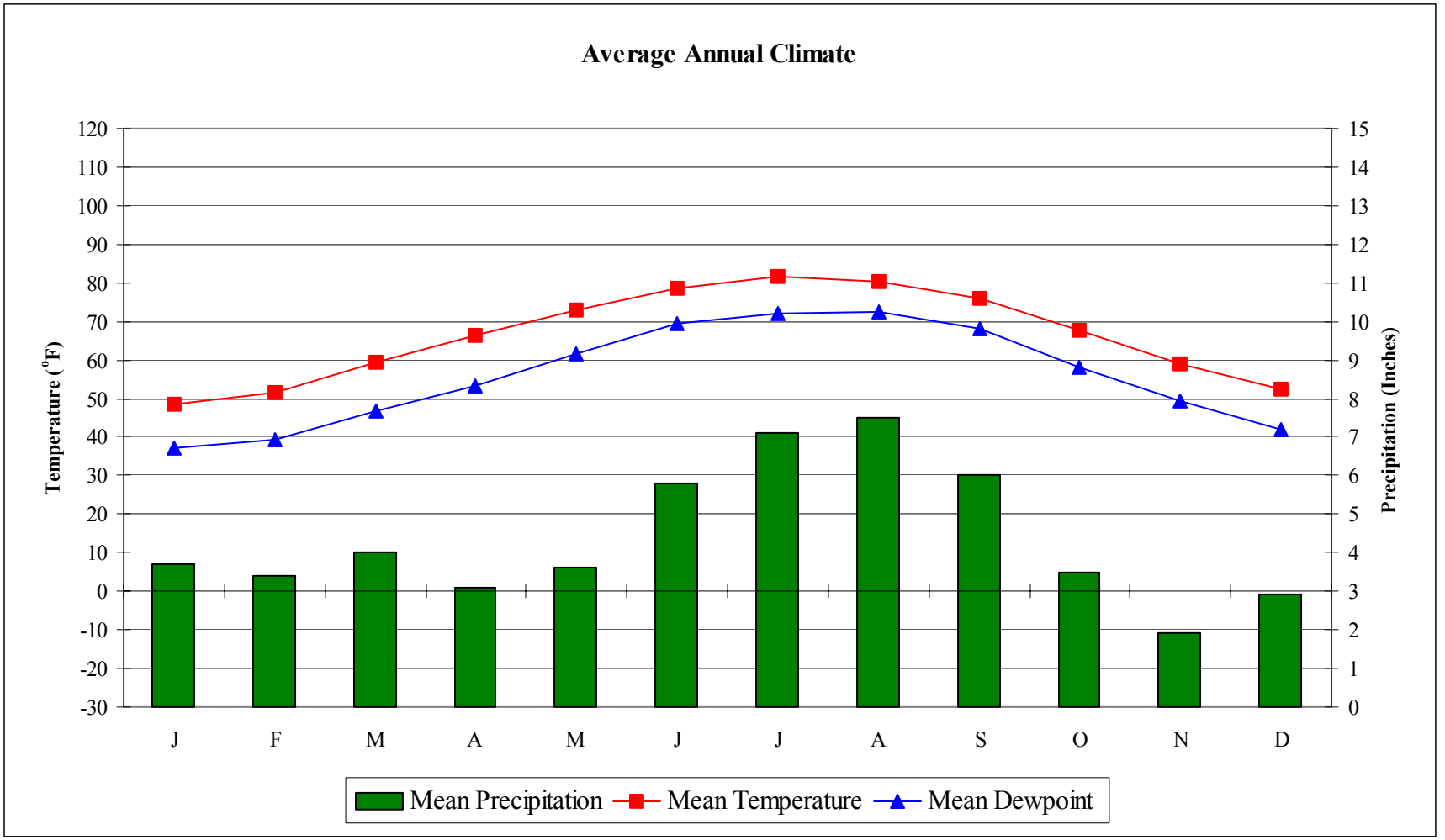
Design Criteria Data

		Mean Coincident (Average) Values			
Dry Bulb Temperature (T)	**Design Value (^oF)**	Wet Bulb Temperature (^oF)	Humidity Ratio (gr/lb)	Wind Speed (mph)	Prevailing Direction (NSEW)
Median of Extreme Highs	99	78	111	7.7	W
0.4% Occurrence	95	78	117	7.3	W
1.0% Occurrence	93	78	118	7.1	W
2.0% Occurrence	91	77	118	7.0	W
Mean Daily Range	18	-	-	-	-
97.5% Occurrence	35	32	20	5.0	W
99.0% Occurrence	30	27	15	4.5	W
99.6% Occurrence	27	24	13	5.0	W
Median of Extreme Lows	22	19	9	6.0	W
		Mean Coincident (Average) Values			
Wet Bulb Temperature (T_{wb})	**Design Value (^oF)**	Dry Bulb Temperature (^oF)	Humidity Ratio (gr/lb)	Wind Speed (mph)	Prevailing Direction (NSEW)
Median of Extreme Highs	83	92	152	6.8	S
0.4% Occurrence	81	90	140	6.8	S
1.0% Occurrence	80	89	136	6.7	S
2.0% Occurrence	79	88	132	6.6	S
		Mean Coincident (Average) Values			
Humidity Ratio (HR)	**Design Value (gr/lb)**	Dry Bulb Temperature (^oF)	Vapor Pressure (in. Hg)	Wind Speed (mph)	Prevailing Direction (NSEW)
Median of Extreme Highs	157	88	1.04	6.3	S
0.4% Occurrence	146	85	0.97	5.7	S
1.0% Occurrence	141	84	0.94	5.7	S
2.0% Occurrence	135	83	0.90	5.2	S
Air Conditioning/		$T \geq 93^oF$	$T \geq 80^oF$	$T_{wb} \geq 73^oF$	$T_{wb} \geq 67^oF$
Humid Area Criteria	# of Hours	106	1652	2028	3629

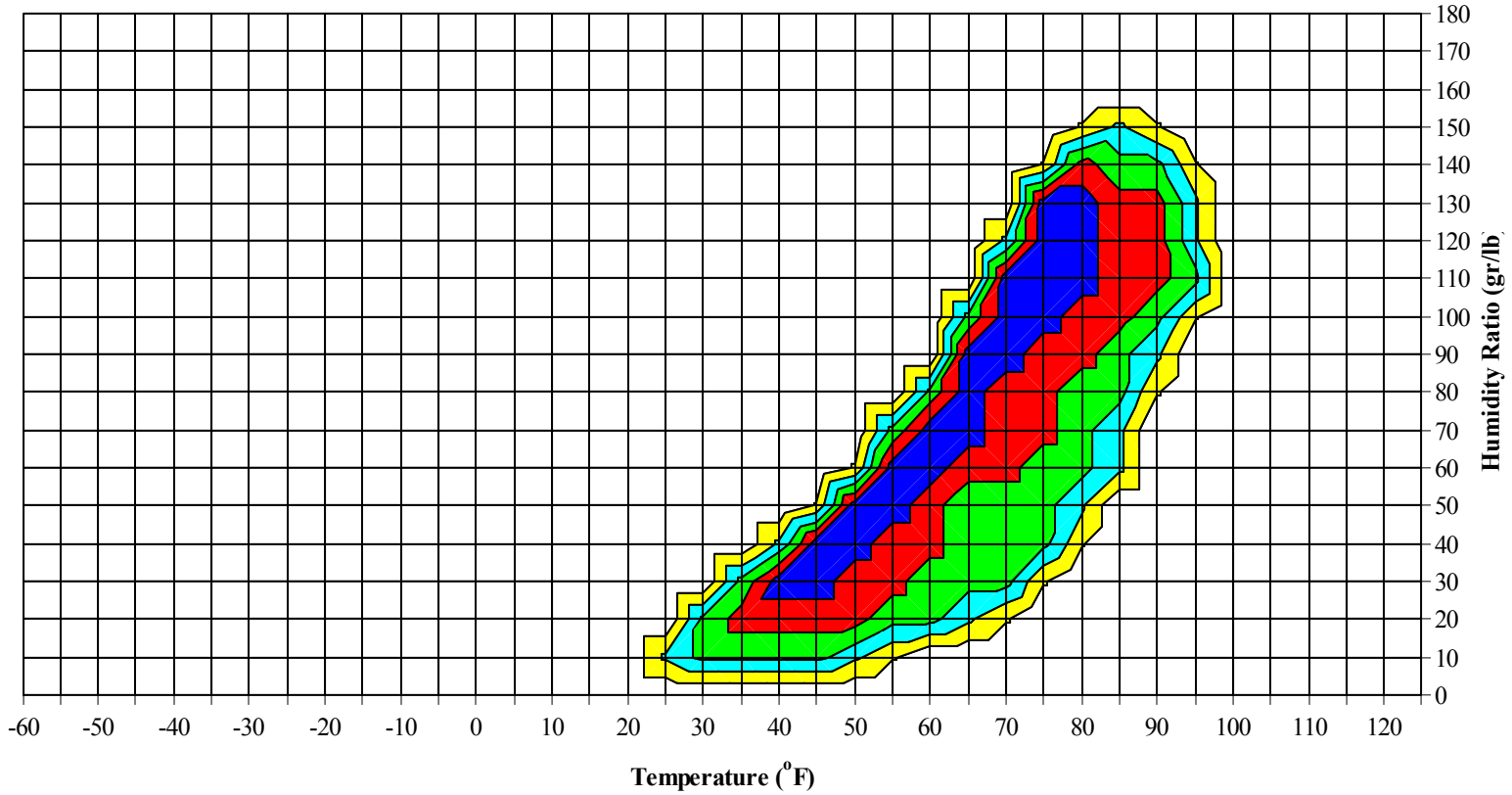
Other Site Data

Weather Region	Rain Rate 100 Year Recurrence (in./hr)	Basic Wind Speed 3 sec gust @ 33 ft 50 Year Recurrence (mph)	Ventilation Cooling Load Index (Ton-hr/cfm/yr) Base 75^oF-RH 60% Latent + Sensible
10	4.3	120	6.1 + 1.7
Ground Water Temperature (^oF) 50 Foot Depth *	Frost Depth 50 Year Recurrence (in.)	Ground Snow Load 50 Year Recurrence (lb/ft^2)	Average Annual Freeze-Thaw Cycles (#)
68.8	0	0	14

*Note: Temperatures at greater depths can be estimated by adding 1.5^oF per 100 feet additional depth.

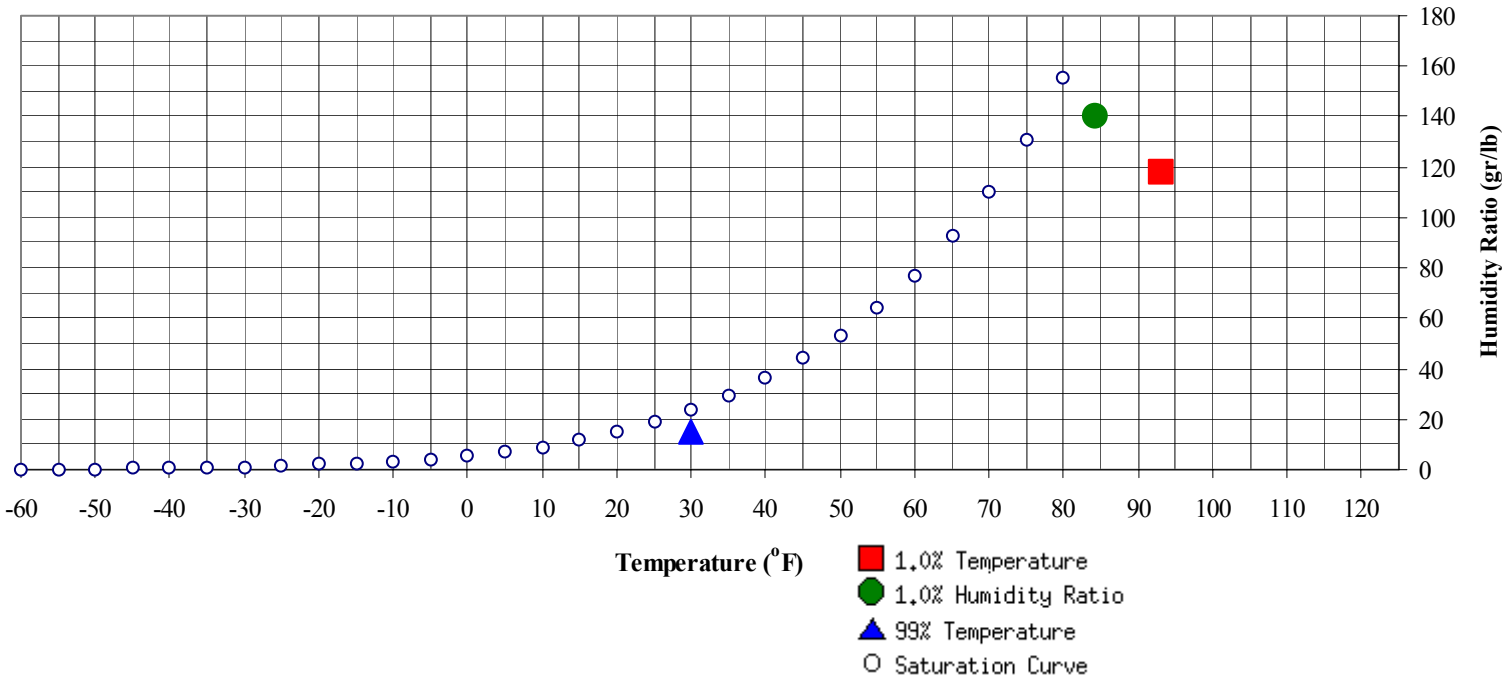

Average Annual Climate
Temperature (°F)
Precipitation (Inches)
120
110
100
90
80
70
60
50
40
30
20
10
0
-10
-20
-30
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
J
F
M
A
M
J
J
A
S
O
N
D
Mean Precipitation
Mean Temperature
Mean Dewpoint

Long Term Psychrometric Summary



- **50% of all observations**
- **80% of all observations**
- **95% of all observations**
- **97.5% of all observations**
- **99% of all observations**

Psychrometric Summary of Peak Design Values



	(°F)	MCHR (gr/lb)	Enthalpy (btu/lb)
99% Dry Bulb	30	15	9.5

	(gr/lb)	MCDB (°F)	MCWB (°F)	MC Dewpt (°F)	Enthalpy (btu/lb)
1.0% Humidity Ratio	140.7	84.3	78.9	77	42.3

	(°F)	MCHR (gr/lb)	MCWB (°F)	Enthalpy (btu/lb)
1.0% Dry Bulb	93	118.2	77.7	40.9

HUNTER AAF GA WMO No. 747804

Dry-Bulb Temperature Hours For An Average Year (Sheet 1 of 5)

Period of Record = 1967 TO 1996

Temperature Range (°F)	January Hour Group (LST) 01 To 08	09 To 16	17 To 00	Total Obs	MCWB (°F)	February Hour Group (LST) 01 To 08	09 To 16	17 To 00	Total Obs	MCWB (°F)	March Hour Group (LST) 01 To 08	09 To 16	17 To 00	Total Obs	MCWB (°F)
105 / 109															
100 / 104															
95 / 99															
90 / 94												0		0	70.0
85 / 89							0		0	65.0		2	0	2	67.9
80 / 84		1		1	68.9		3	0	3	67.1		14	2	16	66.3
75 / 79		3	0	3	65.4		10	1	11	64.0	0	29	7	36	64.1
70 / 74		13	2	15	62.6		23	6	29	61.0	3	41	20	64	61.6
65 / 69	4	24	10	38	59.6	6	27	17	50	59.0	21	50	42	113	59.6
60 / 64	15	33	24	72	56.5	22	33	35	90	56.2	46	43	56	145	56.5
55 / 59	21	40	35	96	51.6	25	35	34	94	51.1	49	32	52	133	52.1
50 / 54	33	42	46	121	47.4	29	33	39	101	46.6	42	19	32	93	47.1
45 / 49	39	38	46	123	42.6	39	27	36	102	42.2	36	11	23	70	42.5
40 / 44	38	27	38	103	37.8	35	20	27	82	37.6	28	5	9	42	38.0
35 / 39	40	15	26	81	33.2	30	9	17	56	33.2	15	2	3	20	33.7
30 / 34	36	9	14	59	28.9	25	4	8	37	28.9	5	0	1	6	29.0
25 / 29	16	3	6	25	24.4	11	1	2	14	24.9	2	0	0	2	24.3
20 / 24	4	1	2	7	19.3	2	0	0	2	20.1	0			0	20.3
15 / 19	2	0	0	2	15.0	0			0	15.8					
10 / 14	0	0		0	9.8										
5 / 9	0			0	6.3										

Caution: This summary reflects the typical distribution of temperature in a typical year. It does not reflect the typical moisture distribution. Because wet bulb temperatures are averaged, this summary understates the annual moisture load. For accurate moisture load data, see the long-term humidity summary and the ventilation and infiltration load pages in this manual.

HUNTER AAF GA WMO No. 747804

Dry-Bulb Temperature Hours For An Average Year (Sheet 2 of 5)

Period of Record = 1967 TO 1996

Temperature Range (°F)	April Hour Group (LST) 01 To 08	April 09 To 16	April 17 To 00	April Total Obs	April MCWB (°F)	May Hour Group (LST) 01 To 08	May 09 To 16	May 17 To 00	May Total Obs	May MCWB (°F)	June Hour Group (LST) 01 To 08	June 09 To 16	June 17 To 00	June Total Obs	June MCWB (°F)
105 / 109															
100 / 104												1	0	1	76.5
95 / 99							2	0	2	74.7		9	1	10	77.3
90 / 94		2	0	2	69.3		10	1	11	73.6		35	7	42	76.6
85 / 89		14	2	16	68.4		39	7	46	72.0	1	73	22	96	75.4
80 / 84	0	33	7	40	67.0	2	78	24	104	69.8	15	78	63	157	73.8
75 / 79	1	56	19	77	65.1	21	68	64	153	68.4	85	30	88	203	72.4
70 / 74	16	54	50	121	63.0	73	37	85	195	66.6	97	10	48	155	69.7
65 / 69	53	44	70	168	60.9	75	10	44	129	63.2	34	2	9	45	64.9
60 / 64	57	22	45	125	57.0	43	3	16	62	58.3	8	1	1	10	60.1
55 / 59	48	9	27	85	52.4	23	1	6	30	53.9	1		0	1	55.6
50 / 54	33	3	14	50	47.9	10	0	1	11	49.7	0			0	49.2
45 / 49	22	1	4	27	43.5	1		0	1	46.1					
40 / 44	7	0	1	8	38.5										
35 / 39	1		0	1	34.5										
30 / 34	0			0	30.0										
25 / 29															
20 / 24															
15 / 19															
10 / 14															
5 / 9															

Caution: This summary reflects the typical distribution of temperature in a typical year. It does not reflect the typical moisture distribution. Because wet bulb temperatures are averaged, this summary understates the annual moisture load. For accurate moisture load data, see the long-term humidity summary and the ventilation and infiltration load pages in this manual.

HUNTER AAF GA WMO No. 747804

Dry-Bulb Temperature Hours For An Average Year (Sheet 3 of 5)

Period of Record = 1967 TO 1996

Temperature Range (°F)	July Hour Group (LST) 01 To 08	July 09 To 16	July 17 To 00	July Total Obs	July MCWB (°F)	August Hour Group (LST) 01 To 08	August 09 To 16	August 17 To 00	August Total Obs	August MCWB (°F)	September Hour Group (LST) 01 To 08	September 09 To 16	September 17 To 00	September Total Obs	September MCWB (°F)
105 / 109					79.8										
100 / 104		3	0	3	78.4		0		0	81.3					
95 / 99		19	3	22	78.6		8	1	9	79.2		1		1	77.0
90 / 94	0	65	15	80	77.9		51	7	58	78.3		17	1	18	77.1
85 / 89	2	86	40	128	76.7	0	92	32	124	76.9	0	60	10	70	75.6
80 / 84	36	53	89	178	75.6	23	62	87	172	75.8	4	77	47	128	73.9
75 / 79	131	18	77	226	73.7	132	27	92	250	73.9	59	52	95	206	72.2
70 / 74	74	4	23	101	71.0	84	7	28	119	70.8	107	22	59	188	69.3
65 / 69	5	0	1	6	66.6	9	1	2	12	66.1	42	8	19	69	64.0
60 / 64	0			0	61.7	0	0	0	0	58.4	20	2	7	29	58.8
55 / 59											7	0	2	9	54.2
50 / 54											1		0	1	48.3
45 / 49											0			0	41.6
40 / 44											0			0	37.7
35 / 39															
30 / 34															
25 / 29															
20 / 24															
15 / 19															
10 / 14															
5 / 9															

Caution: This summary reflects the typical distribution of temperature in a typical year. It does not reflect the typical moisture distribution. Because wet bulb temperatures are averaged, this summary understates the annual moisture load. For accurate moisture load data, see the long-term humidity summary and the ventilation and infiltration load pages in this manual.

HUNTER AAF GA WMO No. 747804

Dry-Bulb Temperature Hours For An Average Year (Sheet 4 of 5)

Period of Record = 1967 TO 1996

Temperature Range (°F)	October					November					December				
	Hour Group (LST)				MCWB	Hour Group (LST)				MCWB	Hour Group (LST)				MCWB
	01 To 08	09 To 16	17 To 00	Total Obs	(°F)	01 To 08	09 To 16	17 To 00	Total Obs	(°F)	01 To 08	09 To 16	17 To 00	Total Obs	(°F)
105 / 109															
100 / 104															
95 / 99		0		0	77.0										
90 / 94		1	0	1	76.9										
85 / 89		12	1	13	73.5		0	0	0	72.3					
80 / 84	1	46	7	54	71.0		9	0	9	70.9		1		1	70.1
75 / 79	9	60	35	103	69.1	0	32	4	36	67.6		12	1	13	67.1
70 / 74	42	58	64	163	66.3	12	49	27	89	65.2	2	23	8	33	64.7
65 / 69	53	38	57	147	62.3	29	42	43	114	61.9	13	30	22	65	61.5
60 / 64	50	22	41	112	57.7	40	39	46	125	57.0	21	39	34	94	56.6
55 / 59	41	9	24	74	53.1	33	32	37	103	51.7	30	41	42	113	52.0
50 / 54	30	3	14	47	48.5	32	20	34	87	47.6	35	44	47	126	47.2
45 / 49	17	1	5	23	44.2	38	11	26	76	43.2	40	29	41	110	42.5
40 / 44	6	0	1	7	40.1	27	4	15	46	38.8	38	17	28	83	37.8
35 / 39	0		0	0	35.9	19	1	6	26	34.3	33	8	17	58	33.5
30 / 34						8	0	1	9	30.0	27	3	7	37	29.0
25 / 29						1	0	0	1	25.1	8	0	1	9	24.8
20 / 24						0	0	0	0	19.1	1	0	0	1	19.6
15 / 19						0			0	17.5	1	0	0	1	16.6
10 / 14															
5 / 9															

Caution: This summary reflects the typical distribution of temperature in a typical year. It does not reflect the typical moisture distribution. Because wet bulb temperatures are averaged, this summary understates the annual moisture load. For accurate moisture load data, see the long-term humidity summary and the ventilation and infiltration load pages in this manual.

HUNTER AAF GA WMO No. 747804

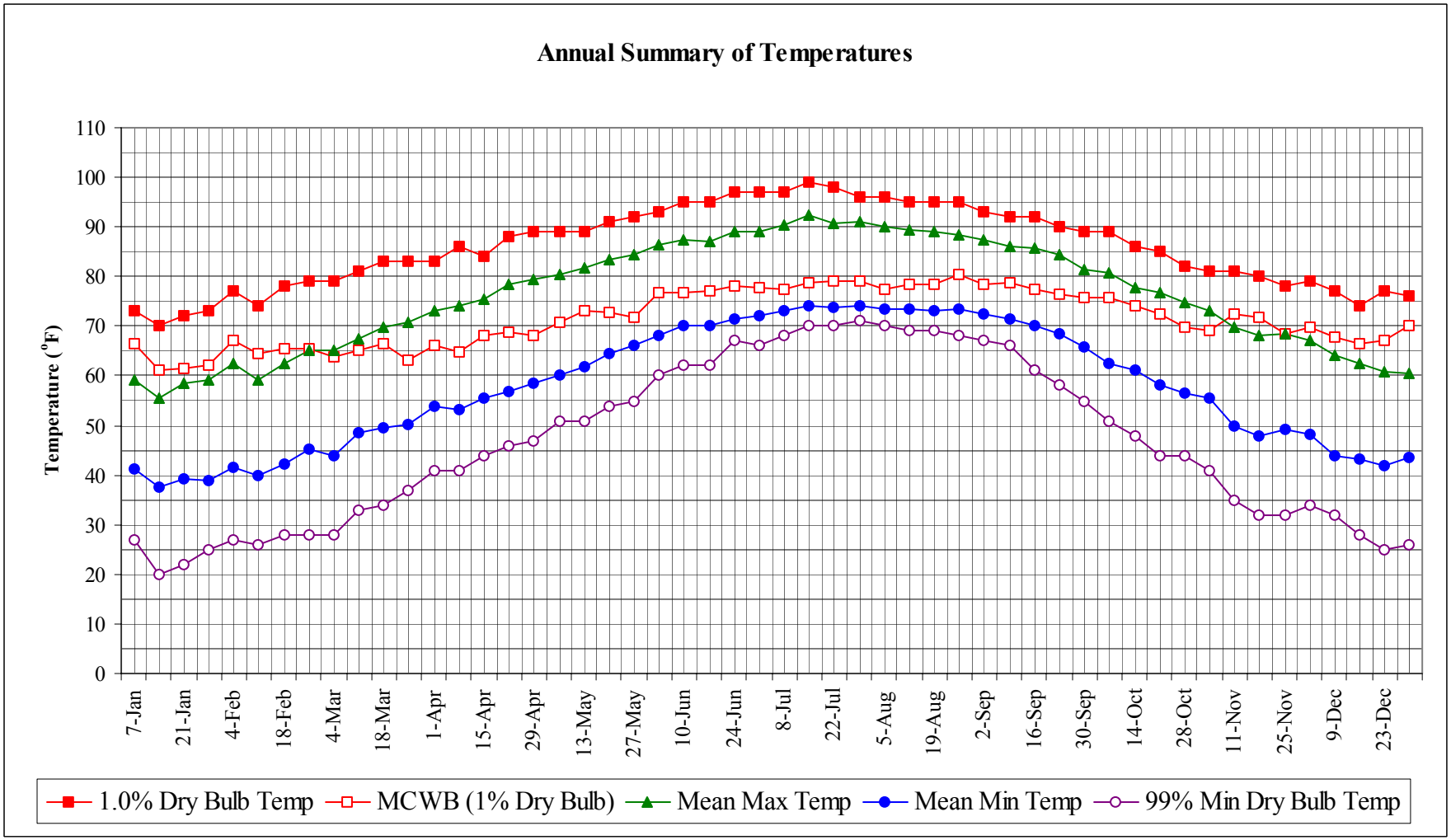
Dry-Bulb Temperature Hours For An Average Year (Sheet 5 of 5)

Period of Record = 1967 TO 1996

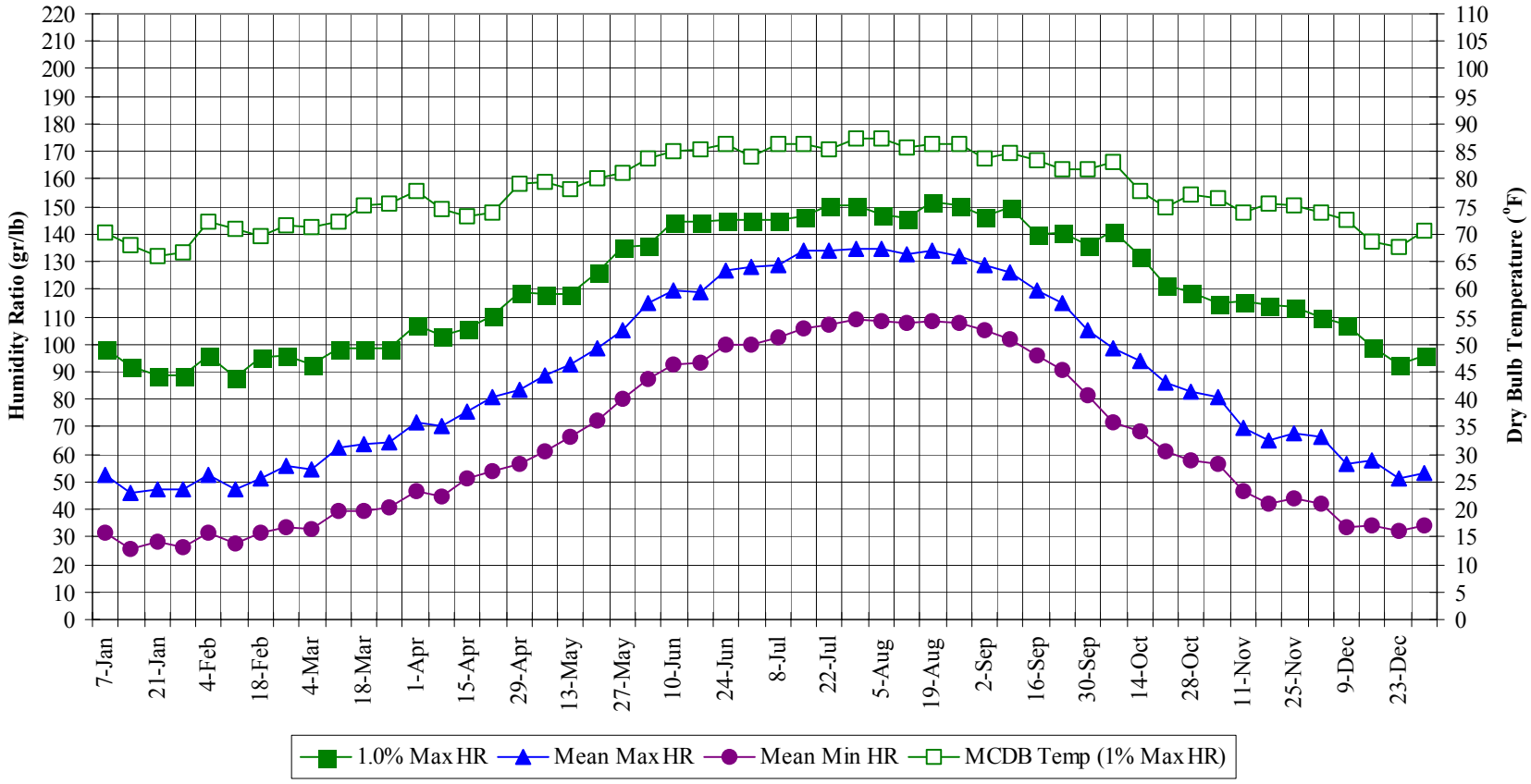
Annual Totals

Temperature Range (°F)	Hour Group (LST) 01 To 08	09 To 16	17 To 00	Total Obs	MCWB (°F)
105 / 109					
100 / 104		4	0	4	78.0
95 / 99		38	5	43	78.2
90 / 94	0	181	33	214	77.3
85 / 89	3	379	114	496	75.5
80 / 84	80	454	327	861	73.4
75 / 79	436	398	486	1320	71.2
70 / 74	513	343	425	1281	67.1
65 / 69	347	276	337	960	61.8
60 / 64	324	237	305	866	57.0
55 / 59	278	199	258	735	52.1
50 / 54	245	164	224	633	47.4
45 / 49	232	119	179	530	42.7
40 / 44	177	73	118	368	38.0
35 / 39	137	34	68	239	33.4
30 / 34	99	16	30	145	29.0
25 / 29	38	5	9	52	24.6
20 / 24	8	1	2	11	19.5
15 / 19	3	1	1	5	15.7
10 / 14	0	0		0	9.8
5 / 9	0			0	6.3

Caution: This summary reflects the typical distribution of temperature in a typical year. It does not reflect the typical moisture distribution. Because wet bulb temperatures are averaged, this summary understates the annual moisture load. For accurate moisture load data, see the long-term humidity summary and the ventilation and infiltration load pages in this manual.


Annual Summary of Temperatures
Temperature (°F)
110
100
90
80
70
60
50
40
30
20
10
0
7-Jan
21-Jan
4-Feb
18-Feb
4-Mar
18-Mar
1-Apr
15-Apr
29-Apr
13-May
27-May
10-Jun
24-Jun
8-Jul
22-Jul
5-Aug
19-Aug
2-Sep
16-Sep
30-Sep
14-Oct
28-Oct
11-Nov
25-Nov
9-Dec
23-Dec
1.0% Dry Bulb Temp
MCWB (1% Dry Bulb)
Mean Max Temp
Mean Min Temp
99% Min Dry Bulb Temp

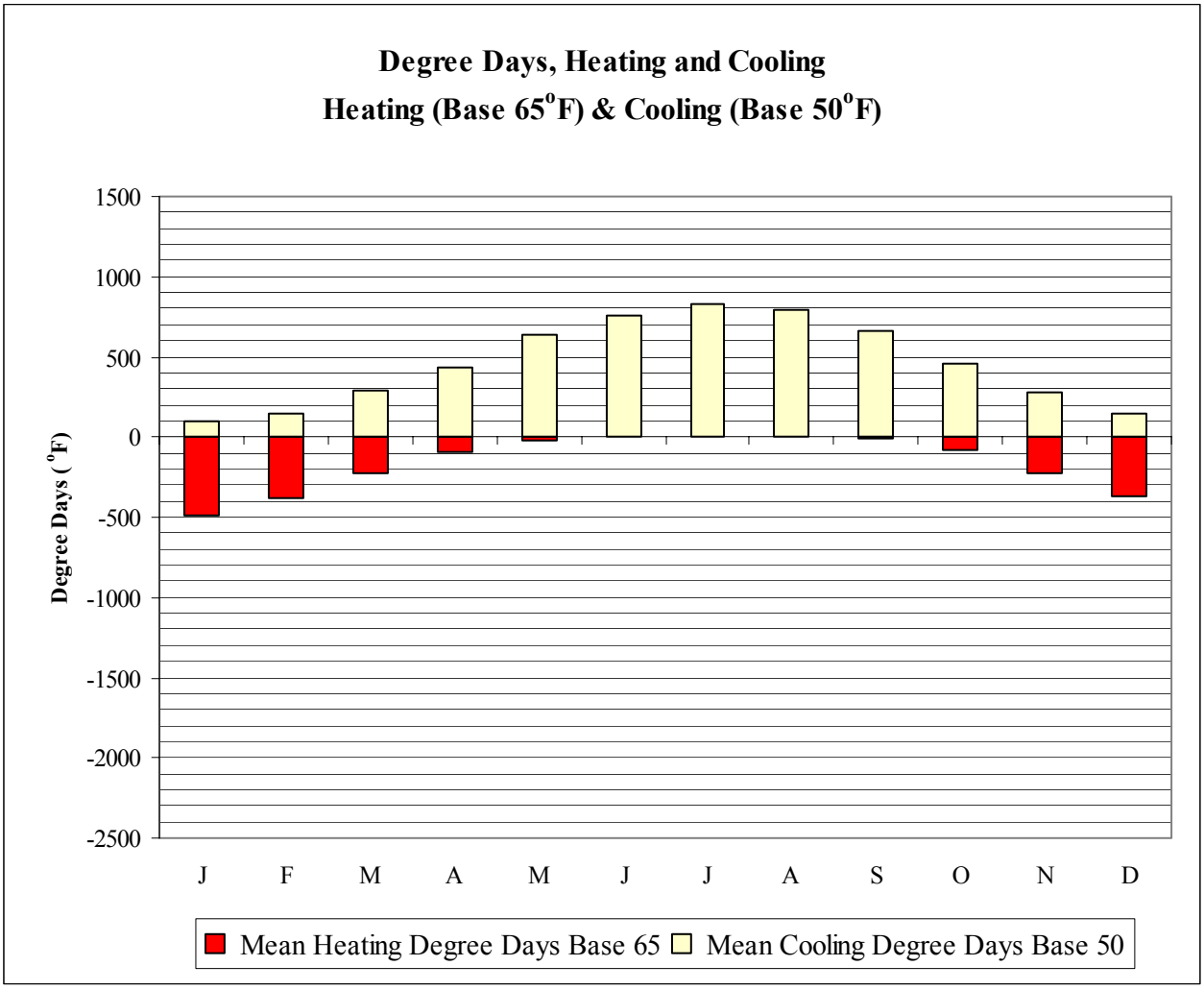
Long Term Humidity and Dry Bulb Temperature Summary



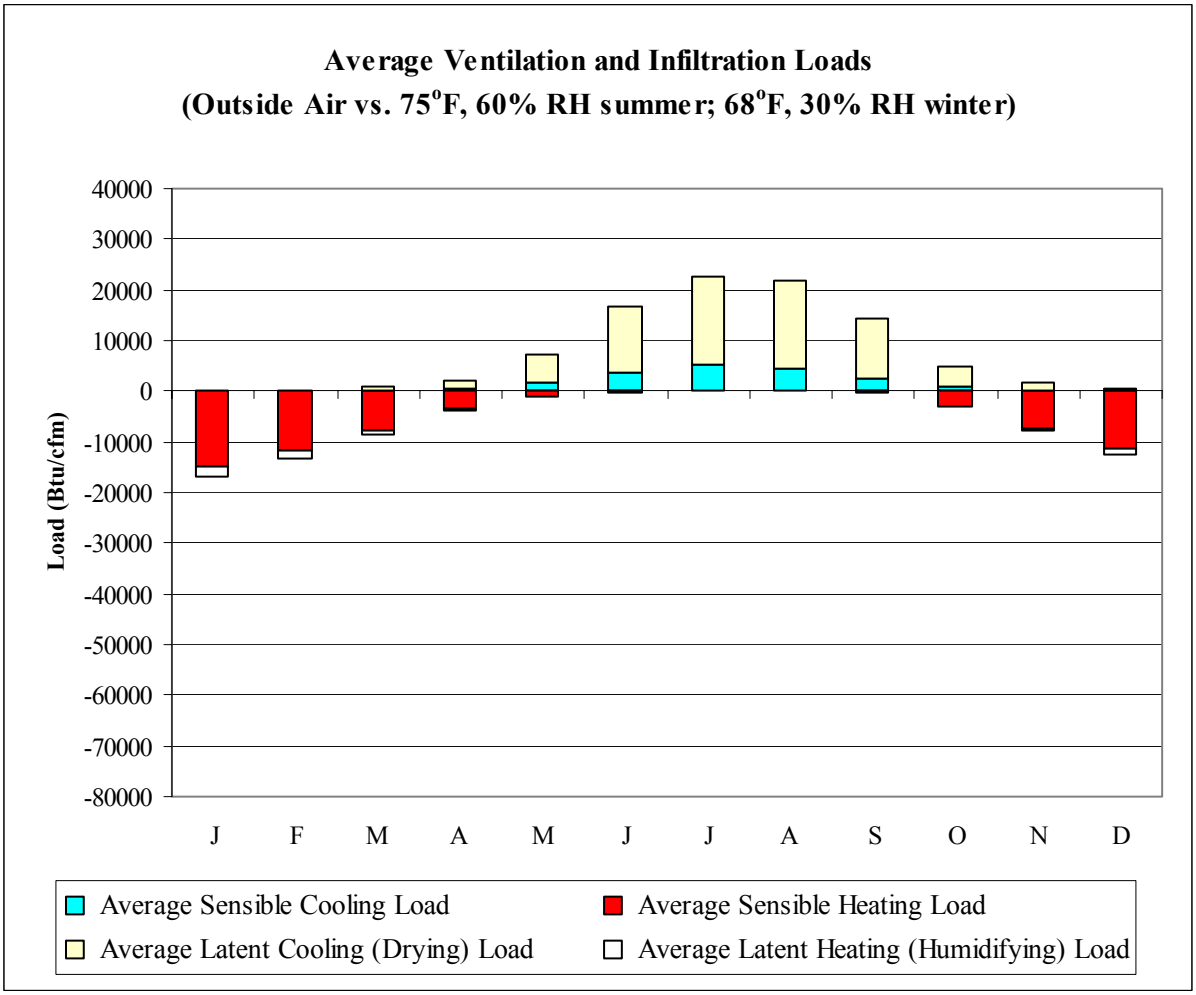
HUNTER AAF GA WMO No. 747804

Long Term Dry Bulb Temperature and Humidity Summary

Week Ending	1.0% Temp (°F)	MCWB @ 1% Temp (°F)	Mean Max Temp (°F)	Mean Min Temp (°F)	99% Temp (°F)	1.0% HR (gr/lb)	MCDB @ 1% HR (°F)	Mean Max HR (gr/lb)	Mean Min HR (gr/lb)
7-Jan	73.0	66.6	59.1	41.1	27.0	98.7	70.2	52.8	31.4
14-Jan	70.0	61.2	55.4	37.6	20.0	91.7	68.1	45.8	25.9
21-Jan	72.0	61.4	58.6	39.3	22.0	88.9	66.2	47.4	28.0
28-Jan	73.0	62.3	59.1	39.0	25.0	88.9	66.8	47.2	26.1
4-Feb	77.0	67.3	62.4	41.5	27.0	95.9	72.2	52.7	31.6
11-Feb	74.0	64.6	59.1	39.8	26.0	88.2	71.0	47.4	27.8
18-Feb	78.0	65.5	62.4	42.3	28.0	95.2	69.5	51.3	31.4
25-Feb	79.0	65.3	65.1	45.2	28.0	95.9	71.6	56.0	33.6
4-Mar	79.0	63.7	65.1	43.9	28.0	92.4	71.1	54.4	32.9
11-Mar	81.0	65.3	67.6	48.4	33.0	98.7	72.3	62.3	39.6
18-Mar	83.0	66.4	69.7	49.4	34.0	98.7	75.3	63.5	39.5
25-Mar	83.0	63.1	71.0	50.1	37.0	98.7	75.6	64.5	40.6
1-Apr	83.0	66.0	73.0	53.8	41.0	107.1	77.8	71.7	46.9
8-Apr	86.0	64.8	74.0	53.3	41.0	102.9	74.6	70.0	44.8
15-Apr	84.0	68.3	75.4	55.5	44.0	105.7	73.2	75.7	51.5
22-Apr	88.0	68.8	78.3	57.0	46.0	110.6	73.8	80.5	54.0
29-Apr	89.0	68.2	79.4	58.3	47.0	119.0	79.3	83.5	56.2
6-May	89.0	70.8	80.4	60.3	51.0	118.3	79.4	88.5	60.9
13-May	89.0	73.1	81.6	61.7	51.0	118.3	78.0	92.8	66.2
20-May	91.0	72.8	83.5	64.4	54.0	126.0	80.0	98.7	72.2
27-May	92.0	71.9	84.4	66.0	55.0	135.1	81.3	104.9	79.9
3-Jun	93.0	76.8	86.3	68.2	60.0	135.8	83.7	115.0	87.1
10-Jun	95.0	76.9	87.4	70.2	62.0	144.2	85.0	119.7	92.4
17-Jun	95.0	77.2	87.2	70.1	62.0	144.2	85.4	119.0	93.2
24-Jun	97.0	78.1	89.1	71.6	67.0	144.9	86.4	127.0	99.8
1-Jul	97.0	77.8	89.2	72.1	66.0	144.9	84.1	127.9	99.5
8-Jul	97.0	77.6	90.3	73.0	68.0	144.9	86.3	128.9	102.1
15-Jul	99.0	78.7	92.4	74.2	70.0	146.3	86.4	134.2	105.5
22-Jul	98.0	79.2	90.9	73.8	70.0	150.5	85.2	133.9	107.2
29-Jul	96.0	79.0	91.0	74.1	71.0	150.5	87.4	134.9	109.2
5-Aug	96.0	77.4	90.2	73.6	70.0	147.0	87.3	134.9	108.3
12-Aug	95.0	78.3	89.4	73.3	69.0	145.6	85.8	132.9	107.9
19-Aug	95.0	78.6	89.1	73.2	69.0	151.9	86.3	133.9	108.6
26-Aug	95.0	80.3	88.6	73.3	68.0	150.5	86.4	132.1	108.0
2-Sep	93.0	78.5	87.3	72.6	67.0	146.3	83.9	128.4	105.0
9-Sep	92.0	78.9	86.1	71.5	66.0	149.8	84.7	126.1	101.6
16-Sep	92.0	77.5	85.7	70.1	61.0	140.0	83.3	119.6	95.6
23-Sep	90.0	76.5	84.5	68.5	58.0	140.7	81.9	115.0	90.6
30-Sep	89.0	75.7	81.4	65.7	55.0	135.8	81.8	105.1	81.4
7-Oct	89.0	75.8	80.7	62.5	51.0	141.4	83.0	98.7	71.6
14-Oct	86.0	74.0	77.9	61.1	48.0	132.3	78.0	94.1	68.6
21-Oct	85.0	72.6	76.9	58.1	44.0	121.8	75.0	85.7	61.4
28-Oct	82.0	69.9	74.6	56.4	44.0	119.0	77.1	82.5	57.6
4-Nov	81.0	69.2	73.1	55.7	41.0	114.8	76.5	80.8	56.4
11-Nov	81.0	72.4	70.0	49.9	35.0	115.5	73.7	69.8	46.3
18-Nov	80.0	71.8	68.3	47.8	32.0	114.1	75.7	65.0	42.0
25-Nov	78.0	68.4	68.5	49.1	32.0	113.4	75.1	67.8	44.1
2-Dec	79.0	69.8	67.0	48.1	34.0	109.9	73.8	66.3	42.3
9-Dec	77.0	67.7	64.2	43.7	32.0	107.1	72.7	56.6	33.7
16-Dec	74.0	66.3	62.6	43.3	28.0	99.4	68.5	57.5	34.4
23-Dec	77.0	67.2	60.7	42.0	25.0	92.4	67.5	51.5	32.4
31-Dec	76.0	70.0	60.4	43.5	26.0	95.9	70.6	53.0	34.3



	Mean Cooling Degree Days (°F) Base 50	Mean Cooling Degree Days (°F) Base 65	Mean Heating Degree Days (°F) Base 65
JAN	103	9	494
FEB	143	17	382
MAR	293	53	228
APR	440	120	94
MAY	634	243	22
JUN	763	366	1
JUL	824	432	0
AUG	798	403	0
SEP	667	290	7
OCT	453	134	79
NOV	273	51	225
DEC	150	17	365
ANN	5541	2135	1897



	Average Sensible Cooling Load (Btu/cfm)	Average Sensible Heating Load (Btu/cfm)	Average Latent Cooling Load (Btu/cfm)	Average Latent Heating Load (Btu/cfm)
JAN	9	-14991	167	-1939
FEB	41	-11841	205	-1527
MAR	197	-7727	562	-655
APR	681	-3579	1411	-189
MAY	1859	-1024	5528	-3
JUN	3763	-107	12877	0
JUL	5377	-5	17111	0
AUG	4549	-9	17417	0
SEP	2532	-356	11683	0
OCT	736	-3003	3943	-30
NOV	127	-7457	1552	-443
DEC	20	-11437	435	-1108
ANN	19891	-61536	72891	-5894

Average Annual Solar Radiation – Nearest Available Site

(Source: National Renewable Energy Laboratory, Golden CO, 1995)

City:	SAVANNAH
State:	GA
WBAN No:	3822
Lat(N):	32.13
Long(W):	81.2
Elev(ft):	52
Pres(psia):	14.7
Stn Type:	Primary
SHADING GEOMETRY IN DIMENSIONLESS UNITS	
Window:	1
Overhang:	0.963
Vert Gap:	0.658

AVERAGE INCIDENT SOLAR RADIATION (Btu/sq.ft./day), Percentage Uncertainty = 9

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
HORIZ.	Global	880	1120	1480	1850	1970	1990	1920	1740	1490	1290	980	810	1460
	Std.Dev.	69	98	102	122	150	130	117	129	133	117	82	69	34
	Minimum	770	870	1290	1600	1520	1720	1620	1450	1170	980	710	640	1390
	Maximum	1040	1340	1640	2160	2200	2210	2180	2000	1740	1470	1120	920	1540
	Diffuse	380	470	590	700	850	920	940	870	740	520	400	350	640
Clear Day	Global	1210	1540	1940	2310	2510	2560	2490	2300	1990	1590	1240	1100	1900
NORTH	Global	250	300	380	460	570	630	600	510	420	340	270	230	410
	Diffuse	250	300	380	450	520	540	530	490	420	340	270	230	390
Clear Day	Global	230	280	350	430	580	680	630	490	390	320	240	210	400
EAST	Global	550	680	860	1050	1070	1060	1050	980	860	780	620	510	840
	Diffuse	300	370	470	560	630	650	650	610	530	420	330	280	480
Clear Day	Global	820	1000	1170	1320	1360	1350	1320	1260	1150	990	820	750	1110
SOUTH	Global	1170	1190	1130	940	730	640	670	790	970	1220	1240	1170	990
	Diffuse	390	450	510	540	560	550	560	570	560	500	430	380	500
Clear Day	Global	1980	1910	1610	1150	810	680	730	990	1380	1720	1880	1930	1390
WEST	Global	560	690	850	1030	1040	1010	950	900	830	760	610	520	810
	Diffuse	300	370	470	560	630	650	640	600	530	420	330	280	480
Clear Day	Global	820	1000	1170	1320	1360	1350	1320	1260	1150	990	820	750	1110

Average Annual Solar Heat and Illumination – Nearest Available Site

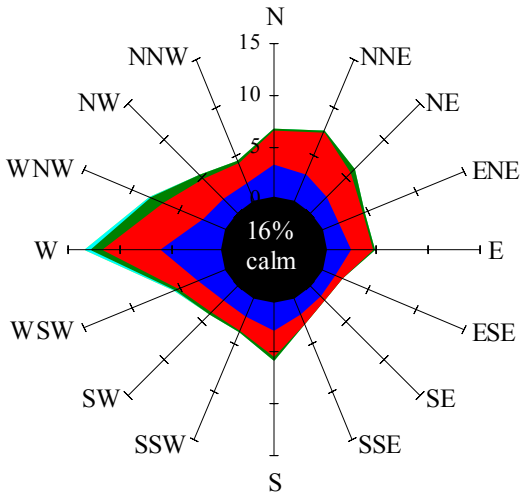
(Source: National Renewable Energy Laboratory, Golden CO, 1995)

AVERAGE TRANSMITTED SOLAR RADIATION (Btu/sq.ft./day) FOR DOUBLE GLAZING, Percentage Uncertainty = 9														
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
HORIZ.	Unshaded	600	790	1060	1340	1430	1450	1390	1260	1070	920	670	540	1040
NORTH	Unshaded	170	210	260	310	370	410	390	340	290	240	180	160	280
	Shaded	150	180	230	280	320	340	330	290	250	210	160	140	240
EAST	Unshaded	380	480	610	750	760	760	740	700	610	550	430	350	590
	Shaded	320	400	500	600	610	600	590	560	490	450	360	300	480
SOUTH	Unshaded	870	850	750	580	440	400	420	490	630	850	910	870	670
	Shaded	820	680	410	320	330	330	340	340	340	590	820	840	510
WEST	Unshaded	390	490	610	730	740	710	670	640	590	540	420	360	570
	Shaded	330	410	500	590	590	570	530	510	480	450	360	300	470

AVERAGE INCIDENT ILLUMINANCE (klux-hr) FOR MOSTLY CLEAR AND MOSTLY CLOUDY CONDITIONS, Percentage Uncertainty = 9											
				March					June		
		9am	11am	1pm	3pm	5pm	9am	11am	1pm	3pm	5pm
HORIZ.	M.Clear	36	76	91	78	39	36	78	102	99	73
	M.Cloudy	22	50	60	51	25	26	57	77	76	51
NORTH	M.Clear	9	14	16	15	10	23	17	18	18	17
	M.Cloudy	9	16	18	16	10	15	18	20	20	17
EAST	M.Clear	74	66	18	15	10	64	76	41	18	17
	M.Cloudy	28	38	19	16	10	33	49	35	20	17
SOUTH	M.Clear	31	63	75	64	33	11	19	33	32	18
	M.Cloudy	15	37	45	38	18	10	19	29	29	17
WEST	M.Clear	9	14	16	63	75	11	17	18	45	75
	M.Cloudy	9	16	18	38	33	10	18	20	37	45
M.Clear	(% hrs)	41	39	37	36	36	39	39	33	31	34
				Sept					Dec		
HORIZ.	M.Clear	9am	11am	1pm	3pm	5pm	9am	11am	1pm	3pm	5pm
	M.Cloudy	21	65	89	85	55	17	50	61	45	11
NORTH	M.Clear	14	43	64	62	38	10	30	37	28	7
	M.Cloudy	8	15	18	18	15	6	11	12	10	4
EAST	M.Clear	6	16	19	19	14	5	11	13	11	3
	M.Cloudy	48	73	39	18	15	46	49	12	10	4
SOUTH	M.Clear	18	40	31	19	14	14	23	13	11	3
	M.Cloudy	13	46	65	62	38	37	79	91	75	26
WEST	M.Clear	8	28	44	43	24	12	33	40	32	9
	M.Cloudy	8	15	18	46	70	6	11	16	53	36
M.Clear	(% hrs)	6	16	19	35	38	5	11	14	25	11
		39	37	30	28	33	36	38	37	37	38

Wind Summary - December, January, and February

Labels of Percent Frequency on North Axis

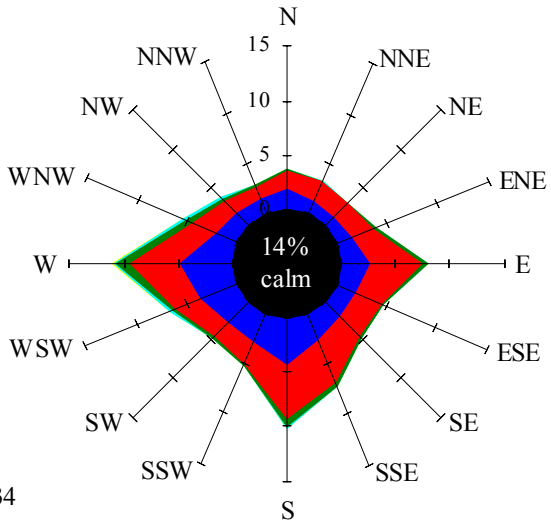


# of Observations: 51831

>34 Knots | 25-34 Knots | 15-24 Knots | 6-14 Knots | 1-5 Knots | Calm

Wind Summary - March, April, and May

Labels of Percent Frequency on North Axis

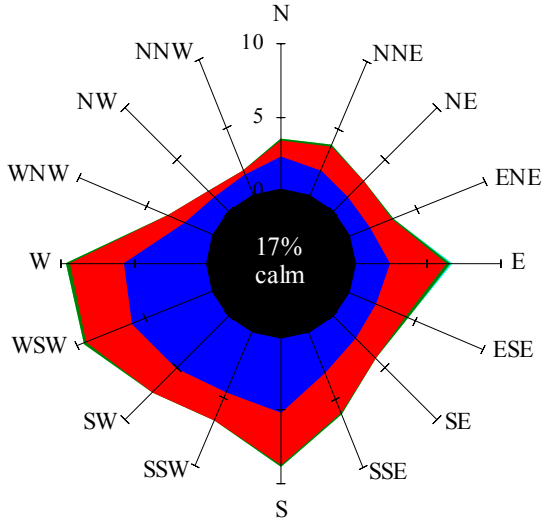


# of Observations: 55734

>34 Knots | 25-34 Knots | 15-24 Knots | 6-14 Knots | 1-5 Knots | calm

Wind Summary - June, July, and August

Labels of Percent Frequency on North Axis

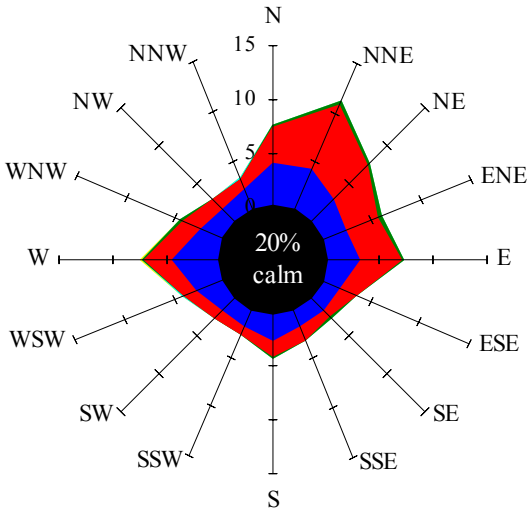


# of Observations: 53763

>34 Knots | 25-34 Knots | 15-24 Knots | 6-14 Knots | 1-5 Knots | calm

Wind Summary - September, October, and November

Labels of Percent Frequency on North Axis



# of Observations: 52632

>34 Knots | 25-34 Knots | 15-24 Knots | 6-14 Knots | 1-5 Knots | calm

HUSSEY, GAY, BELL & DEYOUNG, INC.
A Bell Company
CONSULTING ENGINEERS
ESTABLISHED 1958

MEMORANDUM

To: Steve Hill/ CESAS-PM

From: Martin Bandy/ HGBD- PM

Re: Ft. Stewart Permanent Elementary School - Fire Flow Test

Date: 5/11/05

CC:

Enclosed is the fire flow test received from Hendrix Enterprises. Hendrix Enterprises coordinated with the Ft. Stewart Fire Chief regarding the location of fire hydrants to be tested. The flow test data represents the data obtained on May 3, 2005 at the time of the test. The flow data does not represent what the test data may be at any other time on any other day.

Martin Bandy
HGBD Project Manager

329 COMMERCIAL DRIVE (31406) • P.O. BOX 14247 • SAVANNAH, GEORGIA 31416-1247 • TELEPHONE 912.354.4626 • FACSIMILE 912.354.6754

HENDRIX FIRE PROTECTION
FAX COVER SHEET

P.O.BOX 2348 * 221 N. Zetterower Av. Statesboro, GA.30459
Statesboro (912) 489-2200 *Savannah (912) 236-0928
Toll Free (800) 638-0071 *Fax (912) 489-6281

Send to: Hussey, Gay, Bell & Deyoung, Inc.	**From: Pete Sartory**
Attention: Martin Bandy	**Date: 10 May 2005**
Office location: Savannah	**Office location:**
Fax number: (912) 354-6754	**Phone number: 912-531-5897**

☐ Urgent ☐ Reply ASAP ☐ Please comment ☑ Please review ☑ For your information

Total pages, including cover: 2

Comments

Martin,

Please call with any questions.

Regards
Pete

HENDRIX Enterprises

FIRE PROTECTION - BATTERY DEPOT
SAFETY

Flow Test Data Report

Location - New Elementary School Project Site at Ft. Stewart, Ga.
Date - 03 May 2005

The two tested hydrants are recorded as follows,
Hydrant 1 which is located on Rome Street.
Hydrant 2 which is located on the corner of Tropez Street and Liberty Drive.

Static and Residual pressures were recorded at hydrant 1.
Flow pressure was recorded at hydrant 2.

Static pressure - 60 psi.
Residual pressure - 55 psi.
Flow pressure - 46 psi.

Time of day: 1300hrs
Test duration: 1 hour.
Flow and Residual readings recorded at 15 minute intervals.
Hydrant orifice size - 2 1/2".

Should you have additional questions, please feel free to contact me at (912) 531-5897.

Regards

Pete Sartory

Pete Sartory

P.O. Box 2348 * 221 n Zetterower Ave., Statesboro, Ga. 30459
Statesboro (912)489-2200 * Savannah (912)236-0928
Toll Free (800) 638-0071 * Fax (912)489-6281

US Army Corps
of Engineers®
Savannah District

ENVIRONMENTAL COMPLIANCE REPORT
(Military Construction)

INSTALLATION: Fort Stewart **DATE:** 3/June/2005

PROJECT: Permanent Elementary School **L.I.:** 62291

PM: Steven Hill **AWARD DATE:** 06

DESIGN STAGE OF REVIEW

Project Size & Description:
The U. S. Army proposes to construct an elementary school at Fort Stewart on 23 acres located in close proximity to the new Liberty Woods family housing area. This is near the intersection of Highway 144 and Austin Road in the cantonment area. The new school would be Department of Defence operated, accommodate 350 students and employ 60 staff members. This school is necessary due to the increase in school-age dependents resulting from new Residential Communities Initiative (RCI) housing. This school footprint was included in the RCI footprint that was evaluated in a prior Environmental Assessment.

1. NEPA:

Document Prepared: REC ☒ 813 ☐ CX (wo/REC) ☐ EA ☐ FONSI ☐ EIS ☐ ROD ☐

Responsible Party: SAS ☐; A/E ☐; Installation ☒; Other ☐

Copy of NEPA Document Enclosed: Yes ☒; No ☐; N/A ☐

Explanatory Remarks:

2. HTRW:

Site Investigation Methodology: Records Review ☒; Visual On-Site Inspection ☐
Soil Sampling ☐; Groundwater Sampling ☐;
Other ☐

Responsible Party: SAS ☐; A/E ☐; Installation ☒; Other ☐

Results: Underground/Above Ground Storage Tanks: Yes ☐; No ☐
Landfills: Yes ☐; No ☐
Contaminated Soil: Yes ☐; No ☐
Contaminated Groundwater: Yes ☐; No ☐
Potential Adjacent Contaminant Sources: Yes ☐; No ☐
Other: Yes ☐; No ☐

HTRW Compliance Documents Enclosed: Yes ☐; No ☒

Explanatory Remarks:
No site-specific contamination sampling or investigations have been conducted on the project area or adjacent sites (Record of Environmental Consideration, 31 May 2005). This area is undeveloped property with thick vegetation that mostly consists of pine trees or low growing bushes. There are no contamination concerns associated with the site (phone conversation on 22 June 2005 with Beth Willis-Stevenson, Directorate of Public Works, Environmental Branch, Fort Stewart, Georgia).

3. CULTURAL RESOURCES:

Site Investigation Methodology: Records Review ☐; Phase I C.R.S. ☐;
Phase II C.R.S. ☐; Historic Building Survey ☐;
Other ☐

Responsible Party: SAS ☐; A/E ☐; Installation ☒; Other ☐

Investigation Results: No Eligible Resources ☒;
Resources Phase II C.R.S. Required ☐;
Phase II C.R.S. completed, no mitigation required ☐;
Phase II C.R.S. completed, mitigation required ☐;
MOA Required ☐

Coordination letter from SHPO Enclosed: Yes ☐; No ☒

Explanatory Remarks:

There are no known cultural resource sites within the project area, so the proposed action is not anticipated to impact cultural resources (Record of Environmental Consideration, 31 May 2005).

4. ENDANGERED SPECIES:

Site Investigation Methodology: Records Review ☒; Visual Site Inspection ☐;
Formal Endangered Species Survey ☐

Responsible Party: SAS ☐; A/E ☐; Installation ☒; Other ☐

Investigation Results: No Affect, No BATES Required ☒;
BATES Completed, No Affect ☐; BATES Completed, Affect ☐;
Informal Consultation Required: Yes ☐; No ☐
Formal Consultation Required: Yes ☐; No ☐

Coordination Letter with U.S. Fish and Wildlife Service Enclosed: Yes ☐; No ☒;
N/A ☐

Explanatory Remarks:

The proposed action is not likely to adversely affect any species currently listed or proposed for listing on the federal list of threatened and endangered species. It is also not likely to adversely affect critical habitat (Record of Environmental Consideration, 31 May 2005).

5. WETLANDS:

Site Investigation Methodology: Data Review (Aerial Photographs, NWI Maps, etc.) ☐;
Visual Site Inspection ☒;
Formal Jurisdictional Wetland Determination ☒;
Other ☐

Responsible Party: SAS ☐; A/E ☐; Installation ☒; Other ☐

Investigation Results: No Jurisdictional Wetlands ☒;
Jurisdictional Wetlands, No Impacts ☐;
Impacts to Jurisdictional Wetlands, Formal Delineation and Land Survey Required ☐

Wetland Clearances Requirements: No Section 404 Permit Required ☐;
Nationwide Permit ☐;
Individual Section 404 Permit ☐;
Mitigation Required: Yes ☐; No ☐;
Wetland Compliance Documents/Permits Enclosed:
Yes ☐; No ☐; N/A ☐

Explanatory Remarks:

This project has been located to avoid impacts to wetlands and other surface water resources (phone conversation on 28 June 2005 with Anthony Austermann, Directorate of Public Works, Environmental Division, Fort Stewart, Georgia).

6. LEAD BASED PAINT AND ASBESTOS:

Are structures to be demolished or renovated as part of this project? Yes ☐; No ☒

If yes, which of the following have been or will be conducted:
LB Paint Survey ☐; Asbestos Survey ☐; LB Paint Abatement ☐;
Asbestos Abatement ☐; Other ☐; N/A ☐

Responsible Party: SAS ☐; A/E ☐; Installation ☒; Other ☐

Explanatory Remarks:

This area is undeveloped property with thick vegetation that mostly consists of pine trees or low growing bushes (Record of Environmental Consideration, 31 May 2005). No structures exist on the property, so no lead based paint or asbestos are expected to be encountered.

7. EROSION CONTROL:

Requirement: Approval of Sedimentation & Erosion Control Plan ☒;
N/A (Less Than 1 Acre of Land Disturbance) ☐; Other ☐

Responsible Party: SAS ☐; A/E ☐; Installation ☒; Other ☐

Consultation Status: Plan Being Developed ☐; Submitted to Installation ☐;
Plan Submitted to Approving Authority ☐; Plan Approved ☐;
Other ☐

Explanatory Remarks:

The regulatory requirements and implementation of best management practices will result in no significant impacts to water resources. A Land Disturbing Permit as required by the Georgia Erosion and Sedimentation Control Act will be obtained (Memorandum for Fort

Explanatory Remarks:

Stewart ENRD Env. Br. review, Russell T. Moncrief, Environmental Specialist, Department of Public Works Environmental Compliance Branch, Fort Stewart, Georgia). A drainage swale runs along the property's southern and eastern boundaries. Vegetative buffers that are twenty-five feet wide must be maintained along these drainages. Clearing and tree removal activities may not occur in these buffer zones (Record of Environmental Consideration, 31 May 2005).

8. STORMWATER DISCHARGE:

Requirement: General Permit ☐; SWPPP ☒;
Approved Erosion & Sedimentation Plan ☒; Group Permit ☐;
Individual Permit ☐; N/A (Less Than 1 Acre) ☐; Other ☐

Responsible Party: SAS ☐; A/E ☐; Installation ☒; Other ☐

Consultation Status: N/A ☐; NOI to Installation ☐; Submitted to State ☐;
Draft SWPPP being Prepared ☐;
To Installation ☐; Being Revised ☐;
SWPPP being Prepared ☐;
To Installation ☐; Being Revised ☐; Signed ☐;
E&S Control Plan Coordinated (see part 7) ☐; Approved ☐;
Other ☐

Explanatory Remarks:

The regulatory requirements and implementation of best management practices will result in no significant impacts to water resources. An Erosion and Sedimentation Control Plan and SWPPP will be submitted (Memorandum for Fort Stewart ENRD Env. Br. review, Russell T. Moncrief, Environmental Specialist, Department of Public Works Environmental Compliance Branch, Fort Stewart, Georgia). A drainage swale runs along the property's southern and eastern boundaries. Vegetative buffers that are twenty-five feet wide must be maintained along these drainages. Clearing and tree removal activities may not occur in these buffer zones (Record of Environmental Consideration, 31 May 2005).

RECORD OF ENVIRONMENTAL CONSIDERATION (REC)

1. **PROJECT TITLE**: Construct Elementary School at Fort Stewart, Georgia.

2. **DESCRIPTION OF THE PROPOSED ACTION:** The U.S. Army proposes to construct an elementary school at Fort Stewart, Georgia (Tab 1). The project will total approximately 23 acres and is located in close proximity to the new Liberty Woods family housing area, near the intersection of Highway 144 and Austin Road in the cantonment area. This area was undeveloped property with thick vegetation, with most of the property consisting of pine trees or low growing bushes (Area 2).

   The new elementary school will be a DoD-operated school and will accommodate 350 students and 60 staff members. This new school is necessary due to the increase in school-age dependents resulting from new RCI (Residential Communities Initiative) housing. This school footprint was included in the RCI footprint evaluated in prior EA (Environmental Assessment), Tab 4.

3. **ANTICIPATED DATE OF ACTION**: FY 2006

4. The following criteria were used to evaluate the proposed action:

   a. **Air:** There are new Construction Permit Requirements dependent on BTUs, per Title V Air Permit. Refer to Tab 2 for concerns.

   b. **Cultural Resources:** There are no known cultural resource sites within the project area. Therefore, the proposed action is not anticipated to impact cultural resources.

   c. **Threatened and Endangered Species:** The proposed action is not likely to adversely affect any species currently listed or proposed for listing on the federal list of threatened and endangered species (or critical habitat). This project should remain confined to the existing non-forest area to remain in compliance.

   d. **Forestry:** The proposed construction site contains merchantable timber that must be clearly delineated and marked on the ground. Forestry will require 30 - 45 days to remove merchantable timber from the area of the construction.

   e. **Restoration:** No site-specific contamination sampling or investigations have been conducted or planned on the project area or adjacent sites (Refer to Tab 3, G & H).

   f. **Stormwater/E&S:** A drainage swale runs along the property's southern and eastern boundaries. The drainage eventually flows northwest into Taylors Creek and runs north toward Georgia Highway 144. Twenty-five foot vegetative buffers must be maintained along these drainages. Clearing and tree removal activities may not occur in these buffer zones.

      The project area is approximately 23 acres which requires the following: (Refer to Tab 2, B).

      $80.00/disturbed acre is required. A cashiers check to cover fees made payable to Georgia Environmental Protection Division must be submitted with the E&S Plan and signed NOI to the DPW Environmental Division to forward together to the Georgia Environmental Protection Division a minimum of 14 days prior to any ground disturbance (or tree removal).

g. **Toxic Substance Control Act (TSCA):** The proposed action is for the new construction of an Elementary School. Therefore, TSCA is of no concern.

h. **Water & Wastewater:** Water capacity will not be exceeded with the 60 additional staff members commuting from off the installation. Refer to Tab 2, E.

i. **Wetlands:** BMPs (Best Management Practices) must be used. This project will impact wetlands or other surface water resources. See tab 3 for Jurisdictional letter from the Army Corps of Engineers.

JUSTIFICATION FOR USING A REC: The proposed action is covered by existing or previous NEPA documentation, 32 Code of Federal Regulations 651.19 Record of Environmental Consideration.

NEPA documentation, Environmental Assessment (EA) for the Residential Communities Initiative (RCI) at Fort Stewart and Hunter Army Airfield, Georgia. Large scale construction on this site would not have any significant impacts. The elementary school within the RCI footprint is referenced in the EA. The EA may be reviewed at 1560 Frank Cochran Drive, building 1137.

The point of contact for this REC is Mr. George Harris, Environmental Protection Specialist, at (912) 767-2010.

SIGNED George A. Harris
George A. Harris
Chief, Review Section
Environmental Review

Date 5-26-05

CONCUR Thomas C. Fry
Thomas C. Fry
Chief, Environmental Division
Directorate of Public Works

Date 05/31/05

SUBJECT: IJO#RCI Elementary School-Liberty Woods, FSGA.

MEMORANDUM FROM ENRD ENV BR, AWR SECTION

MEMORANDUM FOR ENRD ENV BR, Review

1. Reference: IJO#RCI Elementary School-Liberty Woods.

2. As requested, the AWR Section has reviewed the materials provided and offers the following comments.

A. Wellhead Protection

[X] The proposed site is not located within a Wellhead Protection Zone.

B. Stormwater Pollution Prevention Plan

NOTE - Project description did not adequately define the area of disturbance. Presume that area is 15-23 acres. Would recommend roof drains be directed to planting beds for treatment and/or use of stormwater in conjunction with irrigation systems.

[X] IF Site is greater than or equal to 5 acres:

- Regulatory Requirement: A Land Disturbing Activity Permit is required to be obtained from local permitting authority (GA EPD) to be submitted with a site specific Erosion and Sedimentation Control Plan (as recommended in the Manual for Erosion & Sedimentation Control for the State of Georgia from Georgia Soil & Water Conservation Commission, also see Regulatory Requirement of Georgia's in-Stream water quality standards as provided by the Rules and Regulations for Water Quality Control Chapter 391-3-6-.03 and E&S 391-3-7), Notice Of Intent (NOI) and fees in the amount of $80.00/disturbed acre is required. A cashiers check to cover fees made payable to Georgia Environmental Protection Division must be submitted to the address noted on the GA EPD Fee Form and the Erosion & Sedimentation Control Plan (E&SCP), the initialed and signed NOI and copy of Fee Form and check must be submitted to Environmental Division to obtain DPW signature and then will be forwarded together to the Georgia Environmental Protection Division a minimum of 14 days prior to any ground disturbance or timber harvesting by contractor for compliance records.
- Exemption: Sites that have NRCS "technical oversight"; NRCS will issue a form with file number (recommend in lieu of the Land Disturbance Permit, see Regulatory Requirement; Stormwater Discharges Associated with Construction Activities), that NRCS be used for technical review and oversight of E&S Control Plan.
- Note: The NRCS form stating they have "technical oversight", the E&SCP, NOI and fees in the amount of $80.00/disturbed acre must also be paid. A cashier's check to cover fees made payable to the Georgia Environmental Protection Division must be submitted to GA EPD to the address on the GA EPD Fee Form. The E&SCP, NRCS Technical Oversight Form and the initialed and signed NOI and a copy of Fee Form w/copy of check must be submitted to DPW Environmental Division for ENV BR to obtain DPW signature and forward together to the Georgia Environmental Protection Division a minimum of 14 days prior to any ground disturbance by contractor and for compliance records. NRCS POC is James Freeman (NRCS/Fort Stewart), 912-767-7829.

C. Wastewater

[X] New Load to existing wastewater treatment system. Insufficient information to determine potential impact to WWTP system.

Alternate treatment scenarios may need to be considered. Presume that kitchen facilities will be associated with structure. Also if grease traps are planned in design need to ensure that proper storage and cleanout to not impact wastewater system.

D. Backflow/ Cross-connection Prevention (BCP)

[X] BCP Regulated. This facility requires backflow/cross-connection prevention protection since its use is classified by the Foundation for Cross-Connection Control and Hydraulic Research as:

[X] Medium/ High degree of hazard

[X] Any installation of a Backflow device is to be performed by an individual certified in Backflow Prevention. The following information must be provided to the DPW ENRD Environmental Branch AWR Section in a certification report (see attached) upon completion of installation as required to ensure the device is tested, to keep Backflow Device Database updated, and ensure future annual testing requirements are met and should be included as a submittal item requirement in the contract:

(1) Manufacturer
(2) Model
(3) Type
(4) Size
(5) Serial Number
(6) Date of Installation
(7) Location of Property/ Bldg No.
(8) Location device was installed
(9) Certification to include individuals name and company name of certified tester, and tester's certification number.

E. Water Conservation

[X] Per the Interim Strategy for Managing Salt Water Intrusion in the Upper Floridan Aquifer of Southeast Georgia, water withdrawals in this area are restricted. The following items should be incorporated in the design, as applicable:

- Water conservation measures should be incorporated in design to include installation of low-flow toilets, faucets and showerheads.
- If outdoor sprinkling systems are to be installed, ensure that conservation measures are taken, to include timers, rain gauges, to ensure the system isn't running while there is rainstorm, etc.

F. Drinking Water System Plumbing, Metering and Permitting

[X] New Load to existing water system. Insufficient information to determine potential impact to Water system. Presume that kitchen facilities will be associated with structure.

[X] Solder used for copper pipes must meet ASTM-B-32 standard (Lead-free Solder).

[X] Community & Non-Community Water System: Work involves installation of a new water service connection. In accordance with GA Rules For Safe Drinking Water, Chapter 391-3-5, and permit condition for FS and HAAF Permits to Operate a Public Water System, (Community Water System Permit Numbers CG1790024 permit condition#13 and CG510107 permit condition#12, respectively), meters must be installed and metered on "...any new water sources and new services connected to its public water supply system." Additionally, Section 4.1.7 of GA EPD's Minimum Standards for Public Water Systems, May 2000, further states that in addition to community systems that non-community transient and

non-community non-transient systems must also meter all new services connected to the water system.

G. **Soil and Groundwater Investigations**
[X] Not applicable - or - No known issues identified.

H. **New or Removed USTs, ASTs, Oil Water Separators (OWS) and/or Generators**
[X] Not applicable - or - No known issues identified.

[X] **IF Generator is included in Project. Fuel source must be confirmed (See Item I, below); and attached Aboveground Storage Tank Specifications/requirements.**

I. **Air Quality Note - If any boilers/heating units are planned for this project, the air program manager will need to know the specifications such as size and fuel type prior to construction!**

[X] Scope of work includes:
[ ] Addition of a new emission source requiring a modification to the Title V Permit.
[ ] Modification of an existing source requiring a modification to the Title V Permit.
[X] Change to existing Air Emission Inventory.
[ ] Significant air emission source.
[X] Insignificant air emission source.

[X] **In regards to all boilers greater than 5 million BTU/hr - upon the completion of the project a certification document (from the Installer) shall indicate that a final inspection shows that construction has been completed in accordance with the filed Air Quality Construction Permit Application and supporting plans, specifications and documentation. (Forwarded to DPW Env. Div.)**

[X] **Boiler with a rated heat input capacity of less than 10 million BTU/hr burning only natural gas and/or LPG is considered to be an insignificant source in our Title V permit and does not require an amendment (i.e., pre - construction permit) although notification is required by letter to EPD and EPA prior to construction. This will need to be included in the annual air emissions inventory as well.**

[X] **Boiler with a rated heat input capacity of less than 5 million BTU/hr burning distillate fuel oil, natural gas and/or LPG (combining is allowable as in primary/secondary system e.g., burning natural gas with fuel oil backup) is considered an insignificant source in our Title V permit and does not require an amendment (construction permit) although notification is required by letter to EPD and EPA prior to construction. This will need to be included in the annual air emissions inventory as well.**

[X] Scope of work includes the addition of a new refrigerant containing system (i.e., HVAC, chiller, cooler, etc.)
Regulatory Requirement: All new equipment containing refrigerants must not contain Class I Ozone Depleting Chemicals (ODC's) as per HVAC 10 CFR 435. This regulation also requires a minimum of SEER rating of 10. Material submittals shall be submitted to DPW ENRD confirming refrigerant is ODC and CFC-free. Material submittals also ensure the mandatory post-wide refrigerant inventory is maintained accurately.

3. Questions regarding these comments may be referred to the undersigned at 767-2010.

Russell T. Moncrief
Environmental Specialist
Air & Water Compliance Section Leader
DPW Environmental Compliance Branch

Enclosures

DEPARTMENT OF THE ARMY
SAVANNAH DISTRICT, CORPS OF ENGINEERS
P.O. BOX 889
SAVANNAH, GEORGIA 31402-0889

REPLY TO
ATTENTION OF:

CESAS-OP-FC (1145b) 19 May 05

MEMORANDUM FOR George Harris, Department of Public Works, Fort Stewart, GA 31314-4928

SUBJECT: Department of the Army Permit Jurisdictional Request 200500801 for Fort Stewart RCI Liberty Woods School

1. I refer the request of April 5, 2005, on your behalf by Mr. Win Seyle, US Army Corps of Engineers, Planning Division, Environmental, concerning a Jurisdictional Determination for a proposed RCI Liberty Woods School, near Hinesville, Bryan County, Georgia. This project has been assigned number 200500801 and it is important that you refer to this number in all communication concerning this matter.

2. We have reviewed the information under criteria contained in the 1987 "Corps of Engineers Wetland Delineation Manual." The drawing entitled "Fort Stewart, Georgia – RCI Liberty Woods School", dated April 5, 2005, is an accurate depiction of the Jurisdictional Wetland Boundaries. This delineation will remain valid for a period of 5 years unless new information warrants revision prior to that date.

3. The wetlands on the subject property are waters of the United States and are therefore within the jurisdiction of Section 404 of the Clean Water Act (CWA) (33 U.S.C. 1344). The placements of dredged or fill material into any waterways and/or their adjacent wetlands or mechanized land clearing of those wetlands would require prior Department of the Army authorization pursuant to Section 404.

4. This delineation/determination has been conducted to identify the limits of the US Army Corps of Engineers' Clean Water Act jurisdiction for the particular site identified in this request.

5. This communication does not convey any property rights, either in real estate or material, or any exclusive privileges. It does not authorize any injury to property, invasion of rights, or any infringement of federal, state or local laws, or regulations. It does not obviate your requirement to obtain state or local assent required by law for the development of this property. If the information you have submitted, and on which the US Army Corps of Engineers has based its determination is later found to be in error, this decision may be revoked.

6. We have enclosed a form, which explains your right to appeal this decision in accordance with Title 33, Code of Federal Regulations, Part 331, published in the March 28, 2000, Federal Register, Vol. 65, No. 60, Pages 16486-16503. We have also enclosed a document titled, "Basis For Jurisdictional Determination."

CESAS-OP-FC (1145b) 19 May 05

SUBJECT: Department of the Army Permit Jurisdictional Request 200500801 for Fort Stewart RCI Liberty Woods School

7. If you have any further questions or concerns pertaining to this matter, please feel free to contact me at (912) 652-5052.

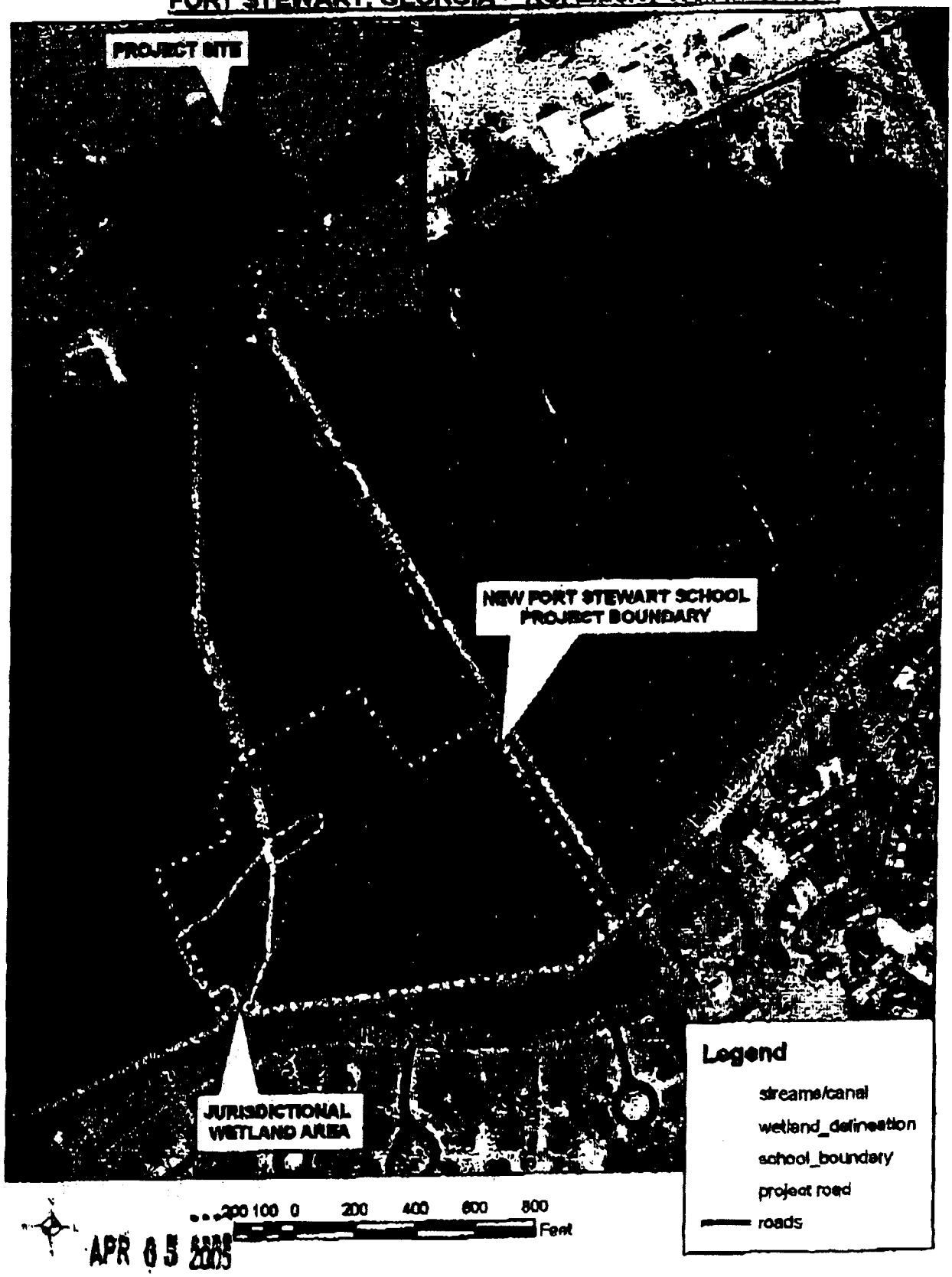
Mark J. Padgett

Encl

MARK J. PADGETT
Project Manager, Regulatory Branch

Copy Furnished:
CESAS-PD-E (Win Seyle)

FORT STEWART, GEORGIA - RCI Liberty Woods School



APR 05 2005

JURISDICTIONAL DETERMINATION
U.S. Army Corps of Engineers

DISTRICT OFFICE: Savannah
FILE NUMBER: 200500801

PROJECT LOCATION INFORMATION:
State: Georgia
County: Liberty
Center coordinates of site (latitude/longitude): 31.8970171737/81.601329688
Approximate size of area (parcel) reviewed, including uplands: less than 1 acres.
Name of nearest waterway: Taylors Creek
Name of watershed: Ogeechee

JURISDICTIONAL DETERMINATION
Completed: Desktop determination ■ Date:
Site visit(s) ■ Date(s):

Jurisdictional Determination (JD):

■ Preliminary JD - Based on available information, ☐ *there appear to be* (or) ☐ *there appear to be no* "waters of the United States" and/or "navigable waters of the United States" on the project site. A preliminary JD is not appealable (Reference 33 CFR part 331).

■ Approved JD – An approved JD is an appealable action (Reference 33 CFR part 331).
Check all that apply:

■ *There are* "navigable waters of the United States" (as defined by 33 CFR part 329 and associated guidance) within the reviewed area. Approximate size of jurisdictional area: less than one acre.

■ *There are* "waters of the United States" (as defined by 33 CFR part 328 and associated guidance) within the reviewed area. Approximate size of jurisdictional area:

■ *There are "isolated, non-navigable, intra-state* waters or wetlands" within the reviewed area.
■ Decision supported by SWANCC/Migratory Bird Rule Information Sheet for Determination of No Jurisdiction.

BASIS OF JURISDICTIONAL DETERMINATION:

A. Waters defined under 33 CFR part 329 as "navigable waters of the United States":
■ The presence of waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.

B. Waters defined under 33 CFR part 328.3(a) as "waters of the United States":
■ (1) The presence of waters, which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide.
■ (2) The presence of interstate waters including interstate wetlands[1].
■ (3) The presence of other waters such as interstate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate commerce including any such waters (check all that apply):
☒ (i) which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ (ii) from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ (iii) which are or could be used for industrial purposes by industries in interstate commerce.
■ (4) Impoundments of waters otherwise defined as waters of the US.
■ (5) The presence of a tributary to a water identified in (1) – (4) above.
■ (6) The presence of territorial seas.
■ (7) The presence of wetlands adjacent[2] to other waters of the US, except for those wetlands adjacent to other wetlands.

Rationale for the Basis of Jurisdictional Determination (applies to any boxes checked above). *If the jurisdictional water or wetland is not itself a navigable water of the United States, describe connection(s) to the downstream navigable waters. If B(1) or B(3) is used as the Basis of Jurisdiction, document navigability and/or interstate commerce connection (i.e., discuss site conditions, including why the waterbody is navigable and/or how the destruction of the waterbody could affect interstate or foreign commerce). If B(2, 4, 5 or 6) is used as the Basis of Jurisdiction, document the rationale used to make the determination. If B(7) is used as the Basis of Jurisdiction, document the rationale used to make adjacency determination:* We reviewed the information provided, and all other information available regarding the site and have determined that these wetlands on the property were delineated in accordance with the 1987 " Corps of Engineers Wetland Delineation Manual." Based on this review, we determined that the wetlands on the submitted site map, would be subject to our jurisdiction pursuant to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899, since they are directly connected to, or are connected to Taylors Creek. Impacts to the wetlands on the site would have the potential to affect interstate or foreign commerce since these waters are navigable waters of the US.

Lateral Extent of Jurisdiction: (Reference: 33 CFR parts 328 and 329)

■ Ordinary High Water Mark indicated by:
- ☐ clear, natural line impressed on the bank
- ☐ the presence of litter and debris
- ☐ changes in the character of soil
- ☐ destruction of terrestrial vegetation
- ☐ shelving
- ☐ other:

■ High Tide Line indicated by:
- ☐ oil or scum line along shore objects
- ☐ fine shell or debris deposits (foreshore)
- ☐ physical markings/characteristics
- ☐ tidal gages
- ☐ other:

■ Mean High Water Mark indicated by:
☒ survey to available datum; ☐ physical markings; ☐ vegetation lines/changes in vegetation types.

■ Wetland boundaries, as shown on the attached wetland delineation map and/or in a delineation report prepared by: Wetland survey prepared by Gardner, Williams & Associates., Inc.

Basis For Not Asserting Jurisdiction:

■ The reviewed area consists entirely of uplands.
■ Unable to confirm the presence of waters in 33 CFR part 328(a)(1, 2, or 4-7).
■ Headquarters declined to approve jurisdiction on the basis of 33 CFR part 328.3(a)(3).
■ The Corps has made a case-specific determination that the following waters present on the site are not Waters of the [illegible]

Applicant: Fort Stewart – RCI Liberty Woods School	File Number: 200500801	Date: 19 May 05
Attached is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
X	APPROVED JURISDICTIONAL DETERMINATION	D
	PRELIMINARY JURISDICTIONAL DETERMINATION	E

[illegible] your rights and options regarding an administrative appeal of the above [illegible] may be found at http://usace.army.mil/inet/functions/cw/cecwo/reg/cfr [illegible] Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.

- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

If you have questions regarding this decision and/or the appeal process you may contact: Mark J. Padgett at 912-652-5052	If you only have questions regarding the appeal process you may also contact: Mr. Arthur Middleton, Administrative Appeal Review Officer CESAD-ET-CO-R U.S. Army Corps of Engineers, South Atlantic Division 60 Forsyth Street, Room 9M15 Atlanta, Georgia 30303-8801

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

Signature of appellant or agent.	Date:	Telephone number:

DIVISION ENGINEER:
Commander
U.S. Army Engineer Division, South Atlantic
60 Forsyth Street, Room 9M15
Atlanta, Georgia 30303-3490

CERTIFICATION

Based on the information available and reviewed, the following statement(s) apply to the subject construction project:

☒ The Subject Construction Project Complies with the Above Environmental Requirements.

☐ The Project Conditionally Complies with the Above Environmental Requirements.

☐ The Project Does Not Comply with the Requirements Noted Above.

Explanatory Remarks:

A Land Disturbing Permit will be obtained.

An Erosion and Sedimentation Control Plan and SWPPP will be submitted.

Prepared By:

LARRY B. OLLIFF
BIOLOGIST, ENVIROINMENTAL
RESOURCES BRANCH

Reviewed By:

DAVID A. COLEMAN
CHIEF, ENVIRONMENTAL
RESOURCES BRANCH

FORT STEWART & HUNTER ARMY AIRFIELD
BORROW PIT EXCAVATION PERMIT

*Date of Application:

*Applicant (user/unit):

*Borrow Pit Location (Pit #): *Ft. Stewart/HAAF training area,*

*Cubic Yards required:

*Type of Material:

*Final Destination:

*Date to Begin:

*Date to End:

***POC (On-site Manager):

*POC Phone Number:

_____
Below line for office use only.

_____
On-Site Manager/Operator – mobile number

_____
Government Contracting Officer Representative

_____
Approved for Borrow Pit Number

_____
Borrow Pit Management - Environmental
(*912-767-9443/fax-767-9779, George Harris or Anthony Austermann*)

Please retain a copy of this Permit, on site, with the operator and notify Range Control when entering or leaving the training area.

Borrow Pit Release/Checkout is required before leaving the borrow pit area.

_____
Release Approved by/date

Surface Mining (Borrow Pit) Standard Operating Procedure

Excavation Procedure:

1. The Operator of the borrow pit will maintain or create a rim ditch to maximize accessibility to borrow pit materials and ultimately to optimize excavation of that material.
2. The Operator will utilize a water pump, where and when appropriate allowing him access to fill materials in a manner consistent with proper surfacing mining procedures.
3. The Operator shall show a plan as to how the property will be mined, the limits of the affected acreage, the natural drainage features and water disposal, the initial mining and overburden (spoil) area(s), the erosion and sedimentation controls, the ingress/egress area(s), the direction and schedule of mining advancement, the area to be left undisturbed (buffer) where necessary, and a plan that shows projected final reclamation of the site.
4. All borrow pit design and excavation actions shall support the objective of the borrow pit eventually becoming a recreational fishpond, if soil conditions, location and ground water resources favor such development. To accomplish this objective the following procedures must be employed.
    a. Average depth, when abandoned, will be 6 feet minimum and 12 feet maximum (water depth will range from 3-8 feet).
    b. Borrow pits will be excavated in a manner, *from the beginning,* to ultimately move them to a useable recreational fishpond.

***The pit operator shall be responsible for maintaining a 4:1 slope on all pit walls/edges and marking these slopes/edges in a manner as to prevent any foot or vehicle traffic from inadvertently falling into the** pit.*

Erosion & Sedimentation Control Measures:
- Remain within the boundaries of the borrow pit, which are marked by "surrounding trees and the perimeter road", while making every effort to retain and/or create a buffer zone(s) of undisturbed/natural vegetation following all guideline within *Georgia's Best Management Practices* to prevent silts and sediments from leaving the borrow pit area and entering the waters of the State of Georgia.

Water Quality Control Measures:
- Borrow pit excavation shall not be conducted within 100 feet of the banks of any waters of the State of Georgia, nor discharges to the water or ground to ensure no adverse affects on these waters.
- No Point Source discharges shall be allowed without coordination with the Environmental Branch, and BMPs will be followed at all times.

Sensitive/Special Sites Measures:
- If historical or archaeological resources are encountered during excavation of this borrow pit. Stop working until the Environmental Branch has cleared the pit. *Immediately contact the **Cultural Resources Office - 767-3359/2010***
- No borrow pit may be expanded that is in the proximity of a protected cultural resource site or within the cantonment area.
***Where applicable, adverse effects from audible elements (blasting), and visual elements are to be avoided near these sites so as not to diminish the integrity of the location, design, setting, materials, workmanship, or other structural details.*

Fish and Wildlife Measures:
- Borrow pits or portions of the pits that are no longer suitable for further excavation for fill may be moved toward a final excavation phase that will produce a manageable fish pond.
- The following construction criteria shall strive to be incorporated during excavation for this purpose:
    1. A water depth of 3 to 8 feet
    2. An area of 3 to 10 acres
    3. *All edges sloped at 4:1, with a 5:1 entrance/exit point for gopher tortoise escape, to be converted to a boat ramp upon pond completion.*
    4. Earthen piers may be left within the excavated pond
    5. Soil and erosion controls to stabilize slope and pond margins with appropriate ground cover plants
    6. Borrow pit/pond shall be free of hazards including pilings, poles, abandoned equipment, etc.

Endangered/Protected Species Measures:
- If the borrow pit you are proposing to use is near a protected species, another borrow pit of the same type of material which is near your final destination will be assigned for your use.
- If threatened or endangered species are encountered during excavation of this borrow pit, all work is to be discontinued, and *immediately contact the* ***Fish & Wildlife Office at 767-7263/2584***.

Wetlands Measures:
- Maintain a minimum distance of 50 feet from borrow pit banks to wetlands delineation (footprints).

Solid/Hazardous Waste Measures:
- All solid and hazardous wastes shall be disposed of properly.
- No debris will be left at, in, or around the borrow pit.

Air Quality Measures:
- Where applicable, adverse effects from atmospheric elements, specifically fugitive dust, are to be prevented so as to avoid any significant deterioration of the air quality.

**** If the borrow pit you are proposing to use has been moved into this final excavation phase or has already been converted into a fishpond, another borrow pit of the same type of material which is near your final destination will be assigned for your use. Also, seasonal conditions may be such as to merit utilization of another site to offset unsafe conditions. These sites will require coordination with your POC for utilization. If necessary, another borrow pit of the same material type that is near your final destination will be assigned for your use.***

** The following pass must be obtained from the Range Control Office* ***before entering*** *any Training Area.*

POV PASS FOR FORT STEWART ROADS AND TRAINING AREAS

TO: Appropriate Range Guards and/or military police

FROM: Chief Range Division, Fort Stewart Ga. 31314 (912) 767-877/8100

The following individual(s) is/are authorized access to the following Training Area/Facilities beginning _____ thru _____ _____
(Start Date) (End Date)

_____ _____
Rank, Name (Last, First) Training Area(s) Facility

_____ _____
Organization Phone Number

Reason for Access Pass

Vehicle (Model) Year (License Plate Number)
(State)

Statement of understanding

I understand that I am permitted to use only the above listed training area(s) and roads leading to and from that area. I may only use that area/facility for the date and time listed below. I understand that I am using these roads at my own risk, and the Commander, 3rd infantry Division and Fort Stewart Assume no responsibility for my safety.

Permanently off limit areas- High Risk Dud Area: Artillery Impact Area, Aerial Gunnery Ranges 1-3 (AGR), EOD Area, Tank Gunnery Ranges (B9-16) and small arms impact area, Luzon Range. Abandoned Ranges located in C1 and C4 training areas.

CAUTION: DO NOT DISTURB UNEXPLODED AMMUNITION! Mark location and notify Range Control (912) 767-8777 or call the Military Police at 911.

I have been briefed and understand the OFF-LIMITS areas and the limitations of this pass. I will notify Range Control at 767-8777 prior to entering an area and upon departure.

_____ _____
Chief, Range Division Bearer's Signature

POST ON DASHBOARD OF VEHICLE